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LONDON: NEWMAN, 9, DEVONSHIRE STREET, BISHOPSGATE.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from S. S. 2081.)

MARCH, 1870.

Golden Plover.—Excepting at the time of their autumn migration, these birds are now tamer and more approachable than at any other period of their sojourn in our marshes. By the first week in March they have commenced moulting and changing their winter dress: with them this seasonal change takes place some weeks earlier than in the gray plover, and they are off to their northern breeding-haunts fully six weeks before the latter leave our coast. In the second week of the month the flocks contained birds in summer plumage, others in transition, and many which as yet shew no indication of a change. The spring note of the golden plover is extremely wild and beautiful; some of its modulations closely resemble the notes of the blackbird: to me, however, there is always something inexpressibly melancholy in this spring call, recalling as it does the recollection of many a wild northern moor and lone mountain summit. Their flight, too, now differs from the winter, is much more buoyant, and often swifter, or, if I may use the expression, has more *élan*. When alighting the flock hover for a time, and then slowly float downwards on motionless wings. They are late this year in leaving our marshes, and hundreds in full summer dress remained to the middle of the first week in April, and I saw a single bird on the 25th.

Snow-flake.—March 9. Observed many hundreds this morning on he narrow belt of sand fringing the foot of our sea embankment. They are busily employed in picking up small fragments of sand and gravel. Some seen as late as the middle of the month.

Wild Duck.—March 10. The stomachs of two mallards contain oats, vegetable matter, and a mass of the broken shells of marine bivalves.

Woodcock.—March 10. Are now moving northward: we always ind some during the second week in March in our plantations and n the coast. They do not linger more than two or three days, and are then off for their breeding-haunts; fortunate in having run the gauntlet of so many breech-loaders.

Smew.—March 15. Amongst various wild-fowl from the coast of Holland, brought into Hull by the packets, I picked out two mature smews.

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Guillemot.—March 17. A guillemot shot on the Humber is in full winter plumage.

Meadow Pipit.—March 20. Meadow pipits have arrived in their summer quarters. They are the first of our little spring visitors whose return we welcome in our bleak marshes, usually preceding the less hardy pied wagtails by ten days. A very small proportion of those breeding here remain to winter.

Pied Wagtail.—March 30. The main body arrived about this date, which is later than an average.

APRIL.

Starling.—April 2. There were two immense flights of starlings on the coast this morning, and, as our resident birds had paired some weeks since and are now busy nesting, these are probably migrants about leaving the country. I did not again see these two flocks anywhere in our marshes, but other flocks of various sizes daily visited the grass pastures along the coast up to the 10th, after which date, excepting our usual stock of paired residents, I did not observe any.

Variety of the Rook.—April 4. There was a great outcry in our small rookery this afternoon, apparently caused by the presence of a strange rook, having all the primaries of one wing, and all but the first of the other, cream-coloured. Young rooks were calling in the nest on the 7th.

Redwing.—April 6. Last seen.

Tree Pipit.—April 6. First arrivals; two seen: unusually early for this bleak district.

Chiffchaff.—April 7th. First heard.

Stock Dove.—April 8. Observed a pair in an old decayed ash in Riby Park. Are by no means common.

Wheatear and Whinchat.—April 9. Seen.

Chimney Swallow.—April 10. First. Another on the 13th, but in no numbers before the 25th.

Willow Warbler.—April 13. Several heard.

Hooded Crow.—April 13. Last noted. A flock on the coast near North Cotes. The "hoodies" had paired by the first week in March; after which they only congregate for some special object—a feast on some tide-cast carcase, or in those places in the fields where the seed-corn is inefficiently covered; they also assemble in small companies for migration. On the 11th I saw a flock, flying at a considerable height, leaving the coast and passing seaward in a direction which, if persevered in, would land them on the Naze in less than twelve hours. A solitary representative of the family remained in company with a carrion crow in the marshes nearly to the end of the month.

Fieldfare.—April 13. Observed some very large flocks in a plantation on our north wolds, but have not seen any after this date.

Dunlin.—April 19. There was a large flight of dunlins in summer plumage on some fallow land in the marsh, where they daily resort at high water. On bringing my telescope to bear upon them I find, with one or two exceptions, every bird asleep, their bills tucked away beneath the scapulars.

Yellow Wagtail.—April 20. First seen.

Redstart, &c.—April 21st. Wind south, very warm and fine. First appearance of redstart, sand martin, whitethroat and sedge warbler.

Buzzard.—April 23. Saw a solitary buzzard soaring above the "New-close woods," the highest portion of our north wolds.

Cuckoo.—April 29. The severe weather and cutting north winds of the last week have probably retarded the arrival of the cuckoos. On the night of the 28th, after a shower, the wind changed to S.W., and as early as 4.30 on the morning of the 29th, the cuckoos were calling all round us.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
May 2, 1870.

Extracts from a Memoir intituled 'A Monograph of the Alcidæ.'

By ELLIOTT COUES, A.M., M.D.

(Continued from Zool. S. S. 3132).

Genus SIMORHYNCHUS, *Merrem.*

Of moderate and very small size; general form stout. Usually with a crest, or with elongated feathers about the head. Bill variable: sometimes simple, often irregular in form, with various elevations and depressions, often with nodules or other accessory elements; always stout, compressed, shorter than the head, the culmen very convex, the tip acute. Nostrils entirely unfeathered. Wings and tail of the ordinary shape and length. Feet small and short; tarsus compressed, entirely reticulate, shorter than the middle toe. Toes long, outer and middle about equal in length, the claw of the latter largest. Claw of inner toe reaching base of middle one. Claws much arched, compressed, acute, the inner ridge of the middle one scarcely dilated.

The genus as above defined is framed to include a number of species, all more or less closely allied, yet presenting differences from each other in form in almost each instance. The various species are all nearly identical in the structure of the wings, feet and tail; in the bill no two entirely agree. Each presents *suæ speciei* characters in the shape of the bill; but the very fact that this organ varies so much seems to indicate that the differences are no more than of specific consequence. Psittacula is perhaps the species which has been most generally separated from the others, in view of its oval upper, and falcate under, mandible. But if this bird is to be generically distinguished, so also must cristatellus; for the latter differs in still greater degree, in the presence of an anomalous accessory element in the bill. This one being taken out, what to do with camtschaticus, so very closely allied? It is almost identical with cristatellus in all points of structure, except in the details of the configuration of the bill, and in these points it stands intermediate between this species and some others. Then microceros and pusillus would have to stand by themselves. So also would tetraculus and Cassini. These two, particularly, differ more from all the rest, in their short, simple conic bills, than any of the rest do from each other. In fine, if psittacula be allowed generic rank, so also must cristatellus, and *pari passuso* must no less than three more genera be recognized. It seems much the most philosophical to group all these forms together in a single genus, regarding the differences in the bills as specific.

In such an acceptation, the genus comprises eight species, which may be thus analysed:

Species (8).

I. *Phaleris*, Temm. Upper mandible oval, under mandible falcate; rictus curved upwards. No crest.
    Blackish; white below from the breast; a white spot below the eye. - - - - - - 1. *psittaculus.*

II. *Simorhynchus*, Merrem. Upper mandible triangular, under mandible nearly straight; rictus horizontal, sinuate. A long recurved crest.
    Angle of the mouth with a supernumerary corneous piece. Sides of under mandible unfeathered. One series of white feathers on the head. - - 2. *cristatellus.*
    Unknown. (See Pallas' description, infrà). - - 3. *dubius.*

Angle of mouth without a supernumerary piece. Sides of under mandible feathered. Three series of white feathers on head. - - - - - - 4. *camtschaticus.*

III. (*Unnamed subgenus*). Bill very small, short, conic, simple, destitute of any irregularities whatever.

Large; bill moderately compressed; a long recurved crest; fuliginous black above, fuliginous gray below. Wing 5·50; rictus ·70; width of bill at base ·30; tarsus, middle toe and claw together 2·50 - 5. [illegible]

Small; bill excessively compressed; no crest (?); uniform plumbeous, lighter below, whitish on the abdomen. Wing 4·25; rictus ·60; width of bill at base ·15! Tarsus, middle toe and claw together, 2 00. - - - - - - 6. ([illegible] *n. s.*

IV. (*Ciceronia*, Reich). Smallest of the genus. Short white hair-like feathers over the forehead.

Length about 6 50; height of bill at base ·30. Upper mandible with a basal knob; bill stout and wide for its length. No decided white patch on scapulars. - - - - - - 7. [illegible] *os.*

Length about 5·50; height of bill at base ·20. Upper mandible without a knob; bill slender and narrow for its length. Conspicuous white patch on scapulars. - - - - - - 8.

Symorhynchus psittaculus (Pall.), Schl.—Habitat: [illegible] and American coasts of the North Pacific; Aleutian I[illegible] n[illegible] [illegible]umtschatka (Mus. Acad. Philad.); Russian America [illegible] I[illegible] [illegible]iths. Institution); Behring's Sea (Schlegel, Mus. Pays-Bas); Ja[illegible]?

Bill moderately large, much compressed, densely feathered for some distance at base of upper mandible and sides of lower. Upper mandible almost perfectly oval in its lateral aspect, its culmen gently curved, and its tomial edges more decidedly convex, the former descending, the latter rapidly ascending to meet at an obtuse angle. Lower mandible extremely slender, falciform in shape, strongly curved upwards, its tip very acute, its tomial edges concave, corresponding to the convex tomia of the upper mandible; the gonys much and regularly curved. Nasal fossæ long and wide, but rather shallow; the nares rather broadly linear, or narrowly oval, overhung by a slightly projecting scale. Frontal feathers embracing culmen in a slightly reëntrant angle, thence descending about perpendicularly to the very edge of the upper mandible. Feathers on side of lower mandible not extending quite so far as those on side of upper. Interramal space fully feathered, but in consequence of the peculiar shape of the rami, there is a small pit or fossa between them, just at their junction, which is unfeathered. Wings and tail of the usual length and shape; the length of the latter contained about three and two-thirds times in the length of the former from the carpal joint to the end of the longest feather. Tarsus shorter than the middle toe without its claw.

Adult: Without a crest. A series of elongated very slender filamentous white feathers from the eye backwards and downwards, white. Entire upper parts, with chin, throat, breast, and flanks, fuliginous or brownish-black, lighter or grayer below than above; other under parts pure white, pretty trenchantly defined against the darker colour of the breast. Bill orange or coral-red, becoming enamel yellow at the tip, and along the cutting edges. Legs and feet dull greenish, darker posteriorly (in the dried state).

The above is the state of plumage of apparently most mature birds; but is much more rarely met with than the succeeding:—Upper parts as just described, but no whitish feathers below and behind eye. Entire under parts white, marbled on the throat, breast and sides with dusky or blackish; this colour usually occupying chiefly or wholly the tips of the feathers, whose bases are white. The mottling is thickest on the breast, most sparse on the abdomen; but it varies in degree with almost every specimen. A state of plumage is described as that of the young, in which the white occupies nearly the whole under parts, and is scarcely mixed with dusky, even on the throat and breast. This stage is not represented in American Museums. The tendency of the mottling, as the bird grows older, seems to be to increase on the throat, breast, perhaps on the sides and flanks, and to disappear from the other under parts, leaving the latter pure white, in marked contrast. The under wing-coverts are always dark ashy brown; the short tibial feathers the same.

Length about 9·00; wing 5·40 to 5·75; tail 1·50 to 1·60; tarsus (average) 1·00; middle toe 1·10. Bill: chord of culmen ·60, chord of gonys just about the same; depth opposite posterior end of nostrils ·45; width at same point ·30; rictus nearly or about 1·00.

This very curious species may be instantly recognized, in whatever state of plumage, by the remarkable configuration of the bill; the rictus being strongly curved upwards, the upper mandible oval, obtuse, the lower falciform, acute. It is one of the longest and best known of the North Pacific representatives of the family, and is apparently a very common bird, though specimens do not occur in collections so often as might be expected. It seems to be decidedly boreal in habitat, and is not recorded, on the American coast, so far south as the United States, though occurring at Sitka, R. A., and probably off the coast of British Colombia.

Simorhynchus cristatellus (Pall.), Merrem.—Habitat: Asiatic and American coasts and islands of the North Pacific, to Behring's Straits; perhaps into the Arctic Ocean. Kamtschatka and Behring's Straits (Mus. Acad. Philad.), Japan, and north-west coast of America (Mus. Smiths. Inst.). Not known to occur on the American coast so far south as Washington Territory, U. S.

Bill surpassing that of all other species of the genus in the extent and diversity of the irregularities of its surface and contour; these irregularities chiefly centred in the base and commissural edges, and produced by the addition of a supernuermary corneous element to the base of the upper mandible just at the angle of the rictus, as well as the expansion and projectiou upwards and outwards of the sides of the lower mandible towards and at its base. Bill, except in the length of its unfeathered commissure, rather short and wide, the length of culmen scarcely surpassing the width of bill at its base. Upper mandible with the culmen short and regularly very convex from base to tip, which latter is rather acute, and slightly overhangs the lower mandible; its tomial edge extremely sinuate and irregular, lightly notched just behind the tip, at the base widened and somewhat everted, for the reception of the cutting edge of the lower mandible; lower mandible not nearly so deep as the upper, somewhat ascending towards the tip, which latter is slender and acute; the gonys short, perfectly straight, moderately ascending, the sides of the lower mandible elongated, everted, their tomial edge elevated and dilated at the base, posteriorly corresponding in contour to the antero-inferior outline of the supernumerary piece. The latter is a subcircular or subquadrate corneous plate, slightly concavo-convex, wedged in between the bases of the tomial edges of the two mandibles, and forming the angle of the rictus; in colour and texture it resembles the rest of the bill, of which it is a true component element. Nasal fossæ small and inconspicuous, not deeply furrowed, filled in by corneous substance like the rest of the upper mandible; the nostrils small, short, linear-oblong, placed close by the tomial edge of the mandible, overhung by an arched and much dilated corneous scale. Feathers extending on culmen to a point opposite the angle of the gonys, thence descending perpendicularly along the sides of the bill, just past but not touching the posterior extremity of the nostrils; thence following the sinuosities of the commissural edge of the upper mandible to the supernumerary piece, and around the border of the latter,* but not encroaching upon it. Interramal space of lower mandible densely feathered; but no feathers encroach upon the sides of the lower mandible, contrary to the usual rule in this group.

Wings and tail of the usual shape and structure of this group; the length of the latter contained three and a half times in the length of the former from the carpal joint to the end of the longest primary. Legs short, stout, little compressed. Tarsus entirely reticulate, shorter than middle toe without claw; outer toe as long as the middle one; its claw shorter and smaller than that of the middle one. Inner lateral toe extremely short, the tip of its claw falling far short of the base of the middle claw.

Adult: An elongated crest of twelve to twenty slender feathers springing in a bundle from one point at the extreme forehead, far in advance of the angle of the rictus, and curving over forwards in the greater part of a circle. These feathers are not truly filamentous, having well developed, though short barbs, and appear narrower than they really are, from the slight obliquity of the barbs from the shaft. A slender bundle of filamentous feathers from the posterior canthus of the eye over the auriculars and sides of the neck. A very few shorter filamentous feathers forming a sparse interrupted superciliary series. All these filamentous feathers white or whitish; the crest concolor with the plumage of the upper parts. General colour of the crown, nape, wing, tail and whole upper parts glossy blackish, with a good deal of a fuliginous or brownish (not plumbeous or cinereous) tint; under parts a diluted shade of the same, or much more brownish gray, tending on the abdomen and posterior under parts generally to ashy gray. Under surfaces of wings and tail like abdomen. Bill and appendages orange or vermilion-red, yellowish towards the tip. Feet dusky greenish, an indefinable colour, in the dried state.

Length about 9·00; wing 5·25; tail 1·50; tarsus, 9·00; middle toe and claw 1·35; outer toe and claw about the same, or slightly less; inner toe and claw 1·00. Bill: chord of culmen ·45; tomia of upper mandible, excluding supernumerary piece ·70; greatest width of the latter ·25; tomia of under mandible ·90; gonys ·40; depth of bill opposite posterior end of nares ·45; width at same point ·35.

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* This supernumerary corneous element is not attached by its whole surface to the subcumbent bone; but a part of its upper border is free and projects a little away from the skull. The fossa down behind this free raised border is fully feathered.

Young. Similar to the adult, except in the following points:—the bill is smaller, weaker, less irregular and sinuous in outline, less brightly coloured, wanting the expansion and eversion of the tomial edges of the two mandibles near their base, and with little or no trace of the supernumerary piece at the angle of the mouth. Even in the youngest specimens the bill shows unmistakable signs of its future character, and cannot be confounded with the simple conic bill of tetraculus, &c. The crest and white setaceous feathers are wanting, or only traces of them are apparent. The colour is less blackish, more inclining to a fuliginous dusky above, and to a light dull brownish gray below.

This species never acquires a distinct parti-coloration like that of most species of the genus. With the exception of the whitish filamentous feathers on the head, the colours are uniform over the whole body, varying in shade on different parts; and the transition from the darkest, that of the upper parts, to the palest on the lower is effected by imperceptible degrees. The brilliantly coloured bill is a conspicuous feature. The colour of the feet cannot be accurately defined in the dried state; but the tints are probably not very striking. The crest only makes its appearance after the bird is full grown, is at least nearly a year old, and has acquired pretty much the perfect shape of the bill. The same is true of the white supra- and post-ocular filaments; and generally among the Phaleridine birds, the presence of these peculiar head-ornaments may be relied on as indices that the bird is adult, and that its bill has acquired its mature form. It is just possible, however, that these remarks may not apply to the setaceous *frontal* feathers of S. microceros and pusillus. The crest of R. cristatellus first appears as a little bundle of short straight feathers shooting out backwards from the plumage of the forehead. These plumes, in an early state of their growth, are much broader, that is, with more distinct barbs or fibrillæ, than subsequently; considerable time elapses before they begin to curl over forwards, and they may continue straight until they are an inch or rather more in length. When full grown, they are nigh unto two inches long, curve until they almost make a circle, drooping gracefully, helmet-wise, upon the bill itself. The crest of this and other species is doubtless moved by peculiar muscles, and entirely subject to the control of its wearer, like the very similar crests of the birds of the genus Lophortyx.

Simorhynchus camtschaticus is obviously the species most likely to be confounded with the present. In fact, such has been its fate at the hands of so distinguished an ornithologist as M. Temminck. It would be wasting words to institute a comparison between the adults of the two species at this late day. In the youthful condition, before the distinctive head-ornaments are apparent, and even before the bill has attained its perfect form, so characteristic in each case, the two species may be distinguished with equal facility. In camtschatica, the basal moiety of the sides of the lower mandible is always feathered; in cristatellus this part of the bill is in its whole length always perfectly bare of feathers. This latter feature is, in fact, the most excellent diagnostic character of cristatellus; by the aid of which alone the species may always be recognized, be it in never so immature condition, with never so undeveloped a bill. The relationships of this species to dubius and tetraculus need not be noticed here, as they are given in all necessary detail under the head of these species respectively.

This species was introduced into the records in 1769, by Dr. Pallas, who fortunately gave it a binomial name, thereby securing it from appropriation by Gmelin, who contrived to filch so many species from Pennant, Latham, and other contemporaneous writers. Dr. Pallas first described it as an Alca, but afterwards removed it to the genus Uria—a very unwarrantable procedure. It is the type of Merrem's genus Simorhynchus, and of Brandt's genus Tylorhamphus; but not, as generally supposed, of Temminck's genus Phaleris, which is based upon Alba psittacula, *Pall.* Though thus referred to so many different genera, it has hardly a specific synonym, unless the name on Audubon's plate 402 be regarded as such.

Numerous excellent specimens of this bird are in the collections of the Philadelphia Academy and of the Smithsonian Institution, from the various localities quoted at the head of this article. It is decidedly a boreal species, not recorded from the coast of the United States, though occurring on the Asiatic shores as far south, at least, as Japan.

Simorhynchus dubius, Coues. This species, if it be really such, appears appropriately named, since there is nothing to distinguish it from cristatellus beyond certain differences in the bill which might with propriety be attributed to an immature condition of the specimen upon which the species was based. And yet the mention of a recurved crest of feathers upon the forehead by Dr. Pallas militates against the supposition that his specimen was not adult. The great reliability which the scientific writings of Dr. Pallas claim, and justly deserve, from their uniform excellence and accuracy, necessitates no small degree of caution in a decision against the validity of one of his species. It will be evident upon the least reflection that, for example, such a perfectly valid species as tetraculus, might be so described, in a few sentences, that no striking impression of its difference from cristatellus should be conveyed. It is also to be borne in mind that Prof. Brandt, probably unsurpassed by any one in the accuracy and extent of his knowledge of the Alcidæ, and particularly well fitted to judge of Dr. Pallas' works, admits the species in question as distinct. And in the present instance it seems preferable to coincide with the views of these naturalists, and to allow the species to hereafter stand upon its own merits, until the proof that it has none is forthcoming, notwithstanding Dr. H. Schlegel's summary assignment of it (as well as of tetraculus) to cristatellus.

There is no specimen purporting to represent this species in any American Museum.

(To be continued.)

Bird-haunts of the Outer Hebrides.

By THEODORE C. WALKER, Esq.

(Continued from S. S. 2119).

IV.

THE kittiwake gull, shot down by thousands for its plumes, here at last has found a safe breeding place, secure while the maelstrom of current seethes and rages below—secure though its worst enemy, man, approach from above, for the birds, though shot, will only fall into the water. The lovely birds are flickering within a few inches of me, as lying perfectly still on a narrow ledge, they again approach their nests, male and female sitting side by side; and to see their evident rejoicing when they find their eggs have not been taken, murmuring to one another, and crying, is one of those sights which thrill through the heart of a lover of Nature. They select those places which are the most precipitous, with fewest crannies, building their nests against the face of the rock, where the smallest crevice affords a resting place; they generally prefer breeding towards the base of the precipice, out of the way of the foul guillemot-ledges, but they by no means confine themselves to these situations, odd pairs being scattered irregularly up its face, even to the top. Mac, who knows every ledge and crack of Beorlan, is collecting a lot of kittiwake's eggs for eating: when boiled hard they are very delicate, far more so than those of the guillemot and razorbill: the white of all these eggs is semitransparent, and the yelk is of a deep orange colour.

A few more cool and cautious steps bring us to a crack overhanging the sea, with a projecting crag above, which shelters us from the rain, which has just come on as it only can rain in the Outer Hebrides. The wild wind shrieks above, howling and raging over the precipice, then, falling in rage on the sea beneath, strips off the tips of the waves in spray, which is dashed against the rocks, and rain and spray trickle down the rock in tears of regret that the lovely sight is shut out. The drifting rain veils the weeping crags, and the distant headland looms out, faint and dim; the sea and sky are blended in one dull gray, with not a gleam of hope struggling through. The rain-drifts whirl in dark wreaths above and around; the roaring of the wind, the thunder of the Atlantic billows rushing into the caverns and again returning to meet the next approaching wave, which dashes high up on the face of the precipice; all combine to produce a scene of never-ceasing strife: each wave adds to the noise which echoes and re-echoes through this amphitheatre of rock, and mingles with the mournful plaint of the kittiwake, the fiendish baying and hoarse croaking of the guillemot and the razorbill, until the air is filled with a chaos of sounds that once heard can never be forgotten.

The rock birds are diving in the water or sitting on the rocks, unsheltered from the wind and rain; and I now observe that the ledges on which the guillemots lay, being broader, are more exposed to the rain than the cracks and places on which the razorbills breed: this is no doubt a wise provision, that the foul excrement of these birds may be cleansed better.

It is a weird sight to see the razorbills and guillemots, heavy, thick-set birds, dash out from the rain-filled air, and alight abruptly; to see the kittiwakes, light as spirits, flickering above and around one, floating in the air, the air alive with birds, thick as snow-flakes on the winter wind, till the eye is unable to follow them, the ear confused in trying to distinguish the individual cries seething up from this bird city. The kittiwakes fascinate my gaze; they seem to be upheld by some invisible hand; they float above and around me so lightly that the eye is mesmerized in watching them, and I am almost tempted to throw myself out into the air, above the treacherous dark green sea, which is foaming underneath this overhanging rock.

But a gleam of light suddenly pierces the dark rain-mist; slowly the nearest crags and points loom out; the rain, dripping from the skirts of the retreating clouds, slackens and ceases; white flocks of cloudlets slowly wreath round the brows of the enormous precipice; and as the last headland looms out, dark and sullen, from the skirts of the black rain-mist, the sun bursts through the rents of the clouds, and sheds his warm light into this rocky bay, tinting up the precipices, till the dripping rocks sparkle with rainbow-light, and the never-ceasing snow-storm of birds, flickering above, below and around, are almost dazzling, in their purity, against the sullen black clouds.

The dripping rocks being extremely unsafe to walk on, owing to the slime and wet, Mac and myself lie in this crack and rest, and gaze in silence at the scene. One feels very insignificant in the midst of such a scene: the enormous precipices towering to a terrific height, their sides weather-beaten and lichen-covered, and cracked and minutely fissured, by battling with the storm and the sea for countless ages. The precipice of Beorlan shows very distinctly the positions selected by the different species of rock birds for breeding. From the summit to about half-way down it is a steep slope, sloping just enough to allow the bladder-campion and thrift to grow, out of which masses of rock peep, and blocks and *débris* of rock are scattered thickly. On every stone sits a puffin, sometimes several; every square foot seems occupied, but they are much thicker in some places than others: they have burrowed holes in the soft turf, in which the females are sitting, and now, after the shower, many females come out and toddle about, walking bolt upright, their pretty orange-webbed feet, curious bill, white front and small black wings making them look very grotesque. Their mates have been standing at the entrance of their holes, and now, joined by the females, they fly down to the sea together, and gambol and splash about in great glee.

The razorbill auks occupy the next position, many laying their one large egg on the rougher cracks or ledges, and others under fallen pieces of rock: although they occasionally lay on the same ledges with the guillemots, they generally select cracks and narrow crannies for themselves, laying their single egg on the rougher portions: this is doubtless because their eggs, being less pyriform or blunter, do not roll round so readily as do the eggs of the guillemot, which are laid on broad flat ledges, and which, being more pointed at the end, roll round on their axis when touched. The razorbill and guillemot when hatching lie on their eggs, and the males, when not fishing, stand by the side of their mates; so some seem sitting, others standing. It is a pretty sight to see, far across the rolling seas, small parties of razorbills and guillemots coming straight to the rock, flying close to the tips of the waves, following one another in a line; then as they approach the cliffs they rise and separate, each flying direct to his mate, who receives him with great delight; he disgorges the fish, which she feeds upon; he toddles round about the egg and inspects it, then they bow and croak to one another in a most loving manner, and the female flies down to the sea to splash and dive and flutter along the top of the waves with exuberance of delight.

Many rock birds select those precipices which are in the immediate neighbourhood of good fishing ground: some fish and dive in the neighbourhood of the precipices, but by far the greater number fly to great distances in search of fish. I have seen puffins, razorbills and guillemots fishing all up the east side of the Outer Hebrides as far as Stornaway Harbour, and as far south as Islay, the puffins generally singly and the guillemots and razorbills in small parties. In a fog one may tell the direction of their breeding-places by their flight; straight as an arrow, swiftly they speed in strings of four or five or more, just above the tips of the waves, their small wings flapping so fast that one can hardly distinguish the rate: they are wonderfully rapid flyers; how such a thick-set large body is propelled at a pace so as to outstrip the long-winged, light-bodied gulls is a mystery to me: the form of their bodies, so admirably adapted for their mode of life, shows the wisdom of the great Creator: a heavy, thick-set body, powerful webbed feet placed close to the short tail, well suited for diving; very short yet strong wings, so that they can fly under the water in pursuit of fish; and a long sharp powerful bill to hold their prey.

Some naturalists have expressed a doubt whether the rock birds can distinguish their ledges and their own eggs: I have no doubt that they can. To test this, we threw a stone at a ringed guillemot sitting below us, and cause her to fly off her egg, and in a little while the same ringed guillemot came to the same egg: in another place we threw some red paint over some razorbills and guillemots; the next day there were the same red-painted birds incubating the same eggs.

The rocks having dried a little, Mac proposes going further down:

I follow close behind; we cautiously climb with hands and feet down the ledges of the precipice: the rock is slimy with the dung of the birds, and the utmost caution is necessary; we creep along the foul ledges, the guillemots stopping till the last moment before leaving their beloved eggs; there are so many that we unfortunately roll several over and smash them. It seems a wise provision that the guillemots lay on the lower and broader ledges, for they make so much more filth that if they occupied the higher ledges the filth running down would pollute the whole face of the cliff, so that the other birds would be most uncomfortably situated; not that the guillemots make more dung than the razorbills, but that they lay closer together and in greater numbers. The bright-spotted green eggs look most beautiful on the ledges, and I am tempted into many perilous places to get them. Most of the eggs obtained on these broad ledges are so stained with filth that they cannot be cleaned: the dark malachite-green eggs are stained of a light sap-green colour by the excrement: the cleanest eggs are those laid separately. The green and black-spotted eggs seem the commonest varieties; but there are not such finely-marked eggs here as I have seen at Ailsa Craig and Flamborough Head.

V.

In crevices just below me are several guillemots incubating, and a ringed guillemot in their midst: in order to observe whether its egg is any different in colour from the others, I carefully approach: at my approach nearly all the male guillemots have flown off, and each female is still on her egg: they stand upright now, watching with palpitating breasts and bills gaping with fright what I am going to do, loth to leave their eggs till the last minute. This is not a ledge, but an irregular basin from which a huge piece of rock has fallen, leaving a succession of cracks, crevices and jumble of loose rock. The ringed guillemot is laying in one of these crevices; several razorbill auks in the same positions, and a few guillemots occupy the flatter portions. As I cling to the rock, quite still, the guillemots again incubate: as the egg is too high and large to stride over comfortably, the bird approaches it, and, bending over, uses her bill and pushes it underneath her breast, working and writhing herself about till the egg is comfortably settled. One poor bird, in her terror, has awkwardly displaced her egg, which goes bump, bump, down the irregular rock for about a foot; the poor guillemot follows, trying in vain to stop it with her bill, tiil, lodged in a crevice, she works it with her breast and bill into a secure position. Keeping my eye fixed on the ringed guillemot, I rapidly scramble down, and clap my Scotch bonnet over her before she can struggle out of the crevice: the egg she is hatching is a rich green, spotted with black: both bird and egg are in my cabinet: the eggs of several more ringed birds we find to be the green varieties. The ringed guillemots occupy the same ledges, breeding promiscuously with the common guillemot. The proportion of ringed guillemots is about one in twenty.

As I want a few rock birds for stuffing, to imitate a rock breeding-station as much as I can, I call Mac, who stands under a sloping face of rock, and fire at several birds, which he catches as they fall down, and in this way procure six or eight. We could sweep whole ledges of birds into the water, but not one of them could be picked up, and to shoot breeding birds for mere sport seems to me inhuman, cowardly and cruel.

The sun is sinking out of sight, blushing that all his warmth should fail to produce any tree-life on these barren, storm-tossed islands, bathing the cold rock with rosy light and glorifying the myriad sea-fowl till each glows with the purest rose-colour. The wind has sunk to rest, leaving, afar off, dark masses of clouds, through which the heights of Rum and the splintered peaks of Skye rise to bid the sun good night and catch his last warm rays. As the smoke from my gun floats up, the whole air seems alive with birds; the echo is yet volleying from rock to rock: through the sound, and overpowering it as it dies away, burst out the screams and cries and demon laughter of the sea-fowl, filling the air with sound. I again fire. Bang! as the echo touches the opposite rock the puffins shoot into the air from their burrows, and flicker straight down into the sea; the razorbills above me seem to *fall* into the sea—they shoot past so swiftly that the eye cannot follow them in the maze of birds; the guillemots beneath throw themselves off the ledges, and plunging into the waves dive out of sight. On rocks opposite, round the head of the bay, the guillemots and razorbills throw themselves into the air, and sweeping down almost touch the sea, then rising they fly round and round, backwards and forwards, their legs spread out wide apart and their small wings flickering. The kittiwake gulls rise from their nests in alarm, and hover round me, densely crowding, anxiously watching me, clamorously, pleadingly wailing, with soft flute-like notes, "kittiw—e—a, kittiw—e—a," flying so close that their pale slate-blue, black-tipped wings, almost brush my face. The maze of birds, when they have been disturbed, at a rock station is something overwhelming: the air seems choked with a seething whirl of birds, and the head and eye are so bewildered that one turns quite giddy, and is fain to hold on and lie down in a cleft of rock. The air just around seems so full of whirling wings for a few moments that one would wonder the birds did not strike against one another, for as the report touches the rock and rolls along its sides they seem to shoot off the ledges all together in a long line; but I see that a great number are still sitting on their eggs; it is only the males and the females with new-laid eggs which have flown off. High above the maze of birds, see, hang the robber gulls, the lesser blackback and the herring gulls! from the stacks among the white sea-foam, from the grassy islets, their lonely home, here they come! hanging over my head, crying "og—og—og—og," then swiftly, silently, roaming the face of the precipice for unprotected eggs; rich will be the feast, and many a sad cry will go out over the waters to-night from the sea-birds. And swiftly along the rock-sides on which the clouds of birds are gradually settling, see the gray and black "hoodie"—that hated bird!—quickly running the gauntlet among the mobbing gulls and rock birds, who buffet and mob him, but, quick of wing, he slips between, and the egg of the kittiwake he will impale and carry off, and the hard egg of the guillemot he will brush off with his wing to break it, and gorge on the half-hatched mess.

When the storm-cloud of birds is thickest, and the air is darkened and clogged with whirling wings, they *seem* to have a rotatory motion, all slowly circling round, but the flight of the heavy rock birds is so straight and rapid that they appear to keep more by themselves, while the kittiwake gulls lightly flicker about in thick flocks. Far beneath, on the waves, the sea is alive with razorbills, guillemots, puffins and kittiwake gulls: the razorbill auks are sitting in strings and circles, lazily floating: some are diving, very many splashing along the surface; these are most likely females, which generally fly down to the sea to clean themselves from the horrible parasites which infest their foul ledges, while their lords stay at home to guard the eggs from the robber gulls and hoodie crows. The puffins are diving and floating and splashing about singly, their smaller size and red beak and legs marking them from the others. The kittiwake gulls, which do not dive, are sitting on the water or lightly paddling about in groups, and the low lion-shaped rock beneath me is thickly covered with them. In their flight, also, one can distinguish at a glance the difference between the razorbill and the guillemot: the head of the razorbill auk seems thicker and blunter, owing to its thick bill; it has more white on the side of the neck, and moreover has a habit of rolling or turning a little to one side, so as to present at one time the breast, and at another the back, to our view.

And now the sea-fowl are gradually settling to rest, as we gather our spoil—five or six heavy birds slung over my shoulder from the gun, and pockets full of eggs, which the slightest bump against the rock would smash. Mac has an old shirt loosely tied round his waist, filled with eggs, all round his body, so that the slightest slip or touch against the rock-side and an indescribable "squelsh" of eggs would be the result. We slowly and cautiously toil up the rock-face, creeping through slits of rock, wriggling along over hanging places, balancing ourselves along the ledges, taking a few birds at a time over the more difficult places; slowly we ascend till we reach the place where we left my brother: we find him with several puffins, which increase our load.

And slowly the darkness is stealing over the sky, the last rosy blushes have long since faded, the wind has sunk to rest, and nought is heard save the sob of the wavelets against the rock, the muffled thunder of the waves in the caverns, and the cries of the ever-wakeful sea-fowl as they settle down, each on its own egg or nest—the one little spot which for a few weeks chains those wandering, restless spirits, the rest of the year being spent in wandering far along coast and sea—here is their home and rest! Far, far across the waste of ever-moving waves, more than fifty miles off, a speck of light is shining calmly, brightly, in the midst of miles of sunken treacherous rocks and passionate waves, and alone looking calmly down on the the troubled sleepless sea: the mother of the tides shows her crescent face, timidly peeping out of the dark thick clouds which have settled down over the splintered "Coolins" of Skye, her silvery beams lying on the restless sea in a quivering thread of light long drawn out; and the stars are peacefully shining down, and in the north-west the spirit of departing day yet lingers in clear holy light behind the gloomy hills of Mingalay. The top of the precipice is gained, and the glare of the lighthouse floods the air, casting a lurid light on all around, as we walk under the cross at the entrance of the buildings, and safe inside the comfortable walls of the lighthouse forget the perils of rock-climbing.

THEODORE C. WALKER.

Erratum.—In 'Birds of the Outer Hebrides,' Chap. II. (S. S. 2113, lines 18 and 19), *for* whinchat *read* wheatear.—*T. C. W.*

(To be continued.)

NOTICES OF NEW BOOKS.

'*Narrative of a Spring Tour in Portugal.*' By the Rev. A. C. SMITH, M.A. London: Longmans, Green & Co. 1870. 220 pp. post 8vo.

> A nation swoln with ignorance and pride,
> Who lick yet loathe the hand that waves the sword
> To save them from the wrath of Gaul's unsparing lord.
>
> But whoso entereth within this town,
> That, sheening far, celestial seems to be,
> Disconsolate will wander up and down,
> 'Mid many things unsightly to strange e'e;
> For hut and palace show like filthily:
> The dingy denizens are reared in dirt;
> Ne personage of high or mean degree
> Doth care for cleanness of surtout or shirt,
> Though shent with Egypt's plague, unkempt, unwashed; unhurt.
>
> BYRON.

THERE is scarcely a name more familiar to the readers of the 'Zoologist' than that of the Rev. Alfred Charles Smith, and certainly no contributions to its pages have been more agreeable and acceptable than those which have emanated from his pen. This narrative, unlike his communications to this journal, contains but a modicum of Natural-History information, being almost exclusively devoted to descriptions of the scenery admired and institutions visited. Mr. Smith's remarks, *en passant*, somewhat take us by surprise, because at variance with preconceived and perhaps not unprejudiced conclusions; for instance, he writes of Lisbon thus:—" As we wandered through the handsome streets and admired the elegant buildings, the squares and public gardens, we simultaneously exclaimed that we knew no foreign town which had such a general air of cleanliness, and we were agreeably surprised to find how remarkably bright and fresh and sweet the whole city appeared to be. Subsequent observation only corroborated these first impressions, and I now unhesitatingly declare that no town of southern lands, not even Turin, which in some respects it resembles, presents a cleaner, fairer appearance than the much-maligned city of Lisbon."—p. 19. This is penned by the author, not simply as the result of personal experience, but as a contrast and antidote to Lord Byron's celebrated description, quoted above. Again, he seems equally disposed to disparage Cintra; his notes on which "terrestrial Paradise" he prefaces in these words: "In the last chapter I was at issue with Lord Byron in regard to the general character of the Portuguese: not less do I dissent from what appears to me his most exaggerated praise of Cintra."

Not only has Mr. Smith a strong feeling in favour of Portugal, but also, and perhaps necessarily, of the Portuguese; and he loses no opportunity of exalting them at the expense of their neighbours in Spain, whose inferiority is set forth in contrast on every convenient occasion. I have no means of judging between opinions so decidedly opposed to those which have become conventional, neither has the 'Zoologist' any business with aught beyond the Zoology of this work; and this is comprised in three passages, all of which are instructive: the first refers to the Museum at Coimbra, and is given verbatim below.

"I had heard that the Museum of Natural History was of superlative excellence; indeed Murphy describes it as 'inferior to few in Europe;' so that my expectations were raised to a high pitch; but when I came to examine the zoological department I was woefully disappointed. There is doubtless a large collection of Mammalia, birds and reptiles, but it is a collection ranging over the whole world, and rich in no single class; not even in the productions of the Brazils and Azores, for which Portugal has of course superior facilities. And then the specimens generally were so miserably set up as to be mere deformities and ghosts of the animals they represented. Of birds there were very few deserving of notice, and for the rarer European species, which one might expect in this southern corner of the Continent, I looked in vain for any examples; indeed, Aquila Bonelli and Porphyrio Veterum were the only real Portuguese rarities which the Museum contained; and there was not even a single specimen of Otis tarda, Cyanopica Cooki and Turnix campestris; none of which are by any means rare in this country. Passing on to other rooms, there is undoubtedly an excellent series of geological specimens, and the museum is rich in Mineralogy, and still more so in Conchology. Moreover, there is evidently an active spirit of research, and a determination to increase the collections, kindled amongst the directors, fostered probably in no slight degree by emulation of the rapid strides in advance which the museum of the capital is making every day under the active superintendence of Professor Barbosa du Bocage. Then, the building furnished by the University is all that collectors could desire, and ample space is provided for the several departments; so that, in all likelihood, the museum of Coimbra will be in a short time very considerably increased; and with the advance of scientific taste, we may hope that most of the wretched and grotesque deformities which at present represent the various branches of the animal kingdom will be abolished, and more correct specimens be substituted in their stead. For certainly from the present examples the student in Natural History could carry away nothing but erroneous notions; and as to anatomical structure, that must have been wholly ignored, and lost sight of by those who arranged the collection as it now stands."—p. 112.

The second quotation I make relates to the lofty and rugged mountains of Gerez, which are allowed to form the wildest, the most inaccessible, and most romantic portion of the kingdom. "There are no guides through these inhospitable regions, neither are there inns, or châlets, or human habitations of any kind where the traveller can procure rest and refreshment. He must be a practiced and enthusiastic mountaineer, and possessed of an adventurous spirit, who cares to push on amidst these unfrequented mountains and explore their almost unknown heights." Our traveller did not so explore them, but he gives the following brief sketch of their inhabitants.

"To the sportsman, however, and, above all, to the naturalist, who is strong and hardy enough to scorn all creature comforts, and to brave the elements, and delights to rough it in the true spirit of a mountaineer, these untrodden wilds must be quite enchanting. For here is the home of the wolf, which is still very abundant in Portugal; so numerous, indeed, in some parts of this country, that the inhabitants find it quite impossible to keep sheep; and of the depredations, ferocity, and even boldness, of this destructive beast, we heard many accounts from those who had encountered it, and in the museum at Coimbra we had seen several gigantic specimens from these mountains. One gentleman recounted to us how he had been followed in winter by one of these hungry animals, which drew nearer and nearer, and evidently sought to take him at a disadvantage; but by facing round suddenly, and showing a bold front, he at length succeeded in scaring the creature away. This was corroborated by another gentleman, who was pursued on one occasion in Spain during a snow storm by a pack of five or six, and who thought himself fortunate to escape by taking refuge in a *venta*, which chanced to be near the spot. Amidst the mountains, and in the valleys of the Gerez, also dwells the wild boar, which is the prince of ground game in Portugal, as the bustard stands at the head of the feathered list, and of which we had heard many a hunting exploit, and whose shaggy forms and formidable tusks we had also admired at Coimbra. One of our informants assured us he had killed several which had weighed over twelve score pounds: they will run at great speed for ten or twelve miles, but in Portugal they are never followed by mounted sportsmen as in India, but are simply roused from their retreats, and shot. When wounded and at bay, they are not to be approached by dog or man with impunity, for the wounds they inflict with their long, sharp tusks are often so severe as to cause the death of the rash assailant, whether canine or human. Another wild animal which inhabits these desolate mountains is the southern or pardine lynx (*Lyncus pardinus*), which must not be confused with the common European lynx (*Lyncus virgatus*), which I have seen brought down by a hunter from the maritime Alps above Nice; but this is a far more handsome animal, spotted like a leopard, and withal a savage cruel beast, partaking of the nature of the wild cat, but even fiercer as well as larger and stronger than that daring marauder. Here, too, as I am informed, may be occasionally found the beautiful and graceful genett (*Genetta tigrina*), an active, supple-limbed, nocturnal marauder, which stealthily surprises its victims on the ground and on the trees, where it is equally at home. But the great prize, *par excellence*, of the wild mountains of Gerez, which the sportsman will risk life and limb to obtain, is the ibex, wild goat, bouquetin, or izzard (*Capra Ibex*), which may be described generally as a sort of reddish-coloured chamois, the most wary and the most active of its tribe, which frequents the nearly inaccessible heights of the mountains, and is as difficult to hunt as the chamois of the Alps. There was also a rumour that an occasional specimen of the mouflon, or large wild sheep, might be met with in these mountain solitudes; but after diligent inquiry, I am obliged to conclude that the report had no foundation in fact; and that if this animal exists in the Peninsula at all, it is confined to the wilder portion of the Pyrenees, to which the bear, once so common in northern Portugal as well as Spain, is now restricted."—p. 151.

I now proceed to what is to me the most interesting portion of the volume, that which relates to the birds, and this must be prefaced by an explanatory introduction from Mr. Smith's own pen.

"I have already called attention," says Mr. Smith, "to the diversified scenery of Portugal; and it may be supposed that a country intersected by rivers whose banks are clothed with the most luxuriant vegetation, abounding in wide-extending forests, as well as vast uncultivated heaths, or sandy plains, covered with brush, with an open coast extending from north to south, washed by the waves of the wide Atlantic, furnished here with rugged rocks and there with cultivated fields, and all lying under a climate which for unclouded brilliancy of sun and almost tropical heat, can scarcely be matched in any other district of Europe, must possess an avifauna which if properly investigated would yield a rich return to repay the exertions of the inquirer. Moreover, it is not alone in rare species that the ornithologist would expect to reap a valuable harvest, but in the differences and shades of colour, and in the variation of size, which even the common birds offer in different localities, and more especially under different climates, that he would look for interesting results in this extreme south-western corner of Europe; and to this point my particular attention was directed before I set out on my journey. Bearing this in mind, and resolved not to overlook the commonest species, I took every opportunity during my few weeks' tour in Portugal, to examine all the birds which came in my way. To this end I wandered through plains and forests, by banks of rivers, and amidst the rocks and mountains, armed with double-barrelled gun and double field-glass; the latter, I take leave to add, quite as serviceable to the student in Ornithology as the former. I also frequented the markets in Lisbon and other towns every day at early morning, and overhauled all the feathered *bouquets* composed of the smaller birds of all ranks and orders, which seem so attractive to continental epicures generally. Moreover, I visited frequently the excellent Museum at Lisbon and the indifferent one at Coimbra, already described, which, so far as I can ascertain, comprehend all the Natural-History collections of the country, and these I carefully examined, verified and catalogued every specimen asserted to have been captured in Portugal. Lastly, I was fortunate in meeting with many intelligent men, who were not only willing to impart valuable information, but were able to do so in a language which I could comprehend; amongst them I must especially mention Dr. Suche and Professor Barbosa du Bocage, the former a fellow-labourer of Vigors, an experienced collector and preserver of some of the larger mammals and reptiles in South America; the latter the scientific and indefatigable director of the Museum at Lisbon, with whom I had many pleasant interviews, and who pointed out to me the more remarkable objects in the national collection, which, thanks to his exertions, is already assuming considerable importance, and must, in the course of a few years, if the present admirable system is continued, become extremely rich, not only in home specimens, but in the productions of the Portuguese foreign possessions and of the Brazils. * * * *

"In an article which I published in the 'Ibis' (New Series, vol. iv. pp. 428—460) I enumerated 193 species as identified by myself either in the flesh or in Portuguese collections at Lisbon and Coimbra; I also made incidental mention of 57 others as confidently asserted to be well known in Portugal by those on whose accuracy I could rely. This made a total of 250; and I added that the catalogue was still imperfect, and only laid claim to be an outline, the details of which I trusted would shortly be followed up by some competent observer. But already, in a recent review of my 'Ibis' article lately published in a scientific periodical, Professor Barbosa du Bocage has been so good as to add a very valuable supplement. * * * We have now then, to our former catalogue of 193 verified Portuguese species, to add a supplementary list of 42 no less carefully determined, which swells the list to 235; and if we reckon those of whose appearance in Portugal we have been assured, though hitherto they have not been positively identified, we arrive at a grand total of 256 species."—p. 183.

The most recent list of British birds of which I am cognizant is that published by myself as an appendix to 'Montagu's Ornithological Dictionary': it contains 381, and four additional species have been discovered since 1866, the date of its publication; thus the British has a clear majority of 129 over the Portuguese list. But there is another point to be mentioned that considerably increases the discrepancy: out of the 256 birds inhabiting Portugal 32 European species appear in the Portuguese which do not appear in the British list; hence the actual proportion of nominally British birds that have occurred in Portugal is only 232, or little more than half. How is this to be accounted for? Let us first take into consideration those American species which accident or the cupidity of dealers have brought into our museums: for instance, the swallowtailed kite, the redeyed flycatcher, the American whitewinged crossbill, the redwinged starling, the goldenwinged woodpecker, the downy woodpecker, the yellowbilled American cuckoo, the belted kingfisher, the American purple martin, the American martin, the passenger pigeon, the Virginian colin, the American bittern, the Eskimo curlew, the American stint, the tree duck, &c. These species ought never to have been admitted into the British list, and having been admitted should be expunged as speedily as possible. Then, again, it must be admitted, indeed, more than that, it must be asserted, that the observers in England are ten to one compared with those in Portugal: the 'Zoologist' has not only recorded observations, but has created observers; before its existence probably the sand grouse, the waxwing, the oriole, paid us occasional visits, as they have since, but there was no record; the observers, and therefore the observations, were wanting. It is indeed a *curiosity* to read such records of *curiosities* as those which formerly saw the light. "Nondescript bird," "rara avis," "extraordinary occurrence," "immense bird," are amongst the least sensational announcements that we find authenticated by such signatures as "Verax," "Veritas," "Vindex" and "Judex." Now happily chapter and verse is required, sought and obtained for every assertion; and should they not be forthcoming the statement itself receives but little favour.

On the other hand, the ornithologist on the Continent has an advantage over his coadjutor in Britain, in the gastronomico-ornithological taste of the inhabitants: nothing from a cormorant to a tomtit seems to come amiss to a Russian, a German, a Frenchman, an Italian or a Portuguese. Hence the feathered *bouquets* suspended in the shops contain occasional rarities, just as the sweeping of a barnfloor must comprise grains of good corn, although often concealed by the superabundance of chaff.

Everything considered, and all the advantages and disadvantages of each country brought into full account, still I cannot find sufficient reason for the discrepancy I have pointed out. The whitetailed eagle occurs not only in Britain and the north of Europe, but throughout Russia, Asia Minor, and the islands of the Mediterranean; the little merlin breeds in Norway, Sweden, Denmark, Austria and France, the islands of the Mediterranean, and in Palestine, Egypt, Abyssinia and at the Cape of Good Hope; the honey buzzard is found throughout Europe, and has been noticed in the islands of the Mediterranean on its southward passage towards Africa; the familiar redbacked shrike goes still further south, even to the Cape of Good Hope; the redstart is abundant in France and Spain on land immediately adjoining the confines of Portugal; the grasshopper warbler, according to Yarrell, inhabits Central and Southern Europe; the sedge warbler is common in France, Spain, Italy, and the islands of the Mediterranean; the yellowhammer, more than visiting, is resident in every country of Europe; "the tree sparrow is rather a common bird in France, Provence, Spain, Italy, Sicily, Malta and Africa;" the lesser redpole is found everywhere from the North Cape to the extreme south of Sicily; the twite occurs in Norway, Sweden, Russia, France, Spain, Italy, Greece, Syria and Egypt; the sand martin is a summer visitant in every part of continental Europe, and a resident in the islands of the Mediterranean: nevertheless, these familiar birds and many others are of necessity excluded from the Avifauna of Portugal, because they form no part of the ornithological *bouquets* that adorn her shops; because they escape the notice of such accomplished resident naturalists as Dr. Suche and the Professor Barbosa du Bocage, and such lynx-eyed visitors as G. F. Mathew and A. C. Smith; and finally because they find no place in the vaunted Museum of Coimbra or the far superior one at Lisbon.

I heartily thank Mr. Smith for this contribution to our Science; and sincerely do I hope he will be remunerated by increased reputation, if not by pecuniary emolument, for the trouble he has taken to render his account complete and truthful.

EDWARD NEWMAN.

'*Birds of Marlborough, being a Contribution to the Ornithology of the District.*' By EVERARD F. IM THURM. London: Simpkin and Co., Stationers' Hall Court. 1870. 164 pp. demy 12mo.

THERE is so large an amount of modesty and good feeling displayed in this little volume that criticism is disarmed; take, for instance, the introductory paragraph: "It is only now, when I feel at last forced to render an account of the work I have undertaken, and have now completed, that I feel fully aware of its many deficiencies. I have, however, one consolation; I feel that I have done my best to render a tribute of gratitude to the school where I passed so many pleasant hours, and to the Natural History Society of that school to which, and to which alone, I owe the formation of tastes, which now prove a continual and endless source of pleasure and occupation to me. In the hope that it may prove useful to them I have undertaken this 'labour of love.'"

The author then proceeds to explain the objects and character of the Society to which he alludes. "For the information of those, either in schools or in private life, who may feel an interest in such societies, a slight sketch of the one in point may not be out of place here.

"In April, 1864, two or three members of the school, who had a taste for Natural History, banded themselves together, electing the Rev. T. A. Preston as their president, and agreeing to meet on certain nights for consultation. Difficulties at first cropped up thickly, but scientific energy, aided by the firm support of the Rev. G. G. Bradley, in time overcame these. The Society grew, and a year and a half after its formation published its first report. The career of the still small but thriving Society brightened more and more. About the middle of 1866 the College provided a room as a museum. From that time to this no cloud of any importance has appeared on the Society's horizon. It now publishes its reports half-yearly, numbers more than half a hundred members, and its collections have outgrown its museum. Such is the Society to which I owe so much, and which I have now so poorly attempted to repay a few of its benefits."

It would be equally unfair to the author and to myself to conceal the fact that there are many deficiencies in the book, and some evident mistakes, such as arranging the goatsucker, jack snipe, wigeon, woodcock, teal and hawfinch with "*rare* and *occasional* visitors," although of the last named the author admits his knowledge that it is commoner at Marlborough than in most places, and he must know that the others are as constant and as regular visitors as are the autumn and the winter. I will not dwell on the supposed occurrence of curlews' eggs on Aldbourne Downs, because this evident mistake is copied from another source, and refers to the *stone* curlew (*Œdicnemus crepitans*) and not to the *true* curlew (*Numenius arquata*). The application of the local name "sea woodcock" to the dabchick (*Podiceps minor*) is also without doubt a copied mistake; this name has repeatedly been applied to the godwits, and those who have seen these long-billed birds cruelly caged in Leadenhall Market, as I have done this very morning, and thus had an opportunity of close inspection, will perceive at once how applicable is the name.

I may remark, in conclusion, that the very paucity of species enumerated, and there are only one hundred and twenty, is in itself an evidence of the conscientious manner in which the list has been prepared: nothing could have been easier, and at the same time nothing could have been more useless, than to have added fifty more species without any positive evidence of their occurrence.

EDWARD NEWMAN.

Arrival of Migrants.—Since I last wrote I have noted the appearance of the following summer birds in the neighbourhood of Plymouth:—April 15th, cuckoo; 16th, tree lark; 17th, puffin; 20th, whitethroat and blackcap; 21st, yellow wagtail; 23rd, sand martin; 25th, sandpiper (common); 26th, swift; 28th, house martin.—*J. Gatcombe; Stonehouse, Devon, April* 30, 1870.

Arrival of Migrants in the Isle of Wight.—April 3rd, wood wren (or willow wren) seen on the upper branches of one of the lofty elms at Bonchurch; 5th, wheatear first observed in this neighbourhood; 6th, swallow seen; 17th, cuckoo first heard; 23rd, nightingale heard at Luccombe. The swallow and martin were last seen here in November.—*Henry Hadfield; Ventnor, Isle of Wight, May* 11, 1870.

Note on Montagu's Harrier.—This harrier may be regarded as a species quite as plentiful as the common or hen harrier of late years in the Land's End district. We get them in Cornwall in all stages of plumage, more frequently in the immature than in the adult state, with the under parts having an uniform fawn-colour. An adult male and female were shot on the property of Mr. George Williams, near the Lizard, this week, and with them there was a second female, a variety, with an uniform sooty *black* plumage throughout, the second of the kind I have noticed: the tone of this colour is so intense that the bars on the tail are only just perceptible: both the females were far advanced in the development of their eggs. The adult female, as also another I had some time since from Scilly, has the breast yellowish white, with rusty red linear oblong blotches, the general colour of the upper parts wood-brown, but on the wing-coverts when closed there is a broken patch of yellowish white. The dark bird was caught in a trap, first baited with a rabbit or something of the sort: this attracted her, but she continued to hover about without pouncing: the keeper thought that a viper would be a more successful lure, and having killed one placed it on the trap: the bird on seeing it immediately pounced on the reptile and was captured. I mention this to show that in the predatory habits of our Falconidæ, and what are deemed "vermin," results beneficial to man may be traced, as well as the contrary. Ought we not to pause before we try to exterminate every creature that we deem unexceptionably mischievous?—*Edward Hearle Rodd; Penzance, May* 4, 1870.

Barn Owl laying Eleven Eggs.—A pair of barn owls (*Strix flammea*) have for eight or ten years past reared their young in a building of mine here. They usually lay from six to eight eggs, in batches of two each: those first laid are sat upon at once, and whilst incubation goes on other eggs continue to be laid at intervals. The first young ones are hatched long before those in the eggs last deposited, and when all are hatched the family consists of various sizes, from the baby owl upwards. There is nothing novel in all this; but what I wish now to mention is that this year eleven eggs have been laid—a number I have not seen recorded before.—*James Murton; Silverdale, Carnforth, May* 12, 1870.

Supposed Occurrence of the American Mottled Owl in Kent.—Lord Clifton says, in the 'Zoologist' for May (S. S. 2138) that the "general colour" of the owl seen by him was reddish brown. Wilson tells us that Strix nævia has "the upper part of the head, the back, ears and lesser wing-coverts dark brown, streaked with black." Lord Clifton remarks, "and to crown all, it had two small stumpy tufts—I can hardly call them ears." Whereas Wilson says, "Horns" (as they are usually called) "very prominent, each composed of ten feathers, increasing in length from the front backwards." Lord Clifton observed that "the face was much redder than the breast." But the mottled owl, according to Wilson, has the "face whitish, and both breast and belly white, variegated with black and brown streaks." Your correspondent concludes with the remark, "What else could this be but Strix asio?" Why? To my mind it might be Strix passerina, of the same size (within half an inch) as Strix nævia, and answering fully as well the description given of the owl seen at Cobham. Though the passerine owl has not the "stumpy tufts" spoken of, its bristle-tipped plumelets are elongated, and it has, according to Temminck, "les parties inferieurs d'un blanc roussâtre."—*Henry Hadfield.*

Late Stay of the Fieldfares.—Up to the 6th of this month the fieldfares were still with us. I had constantly watched a flock of about twenty for some years: they assembled daily in some tall trees adjoining this property, but I expect they have now taken their departure, as I have watched for them for the last few days, but they are not in their old haunts.—*Edward Sweetapple; Eynsham Paper Works, near Oxford, May* 11, 1870.

Colour of Cuckoos' Eggs.—I was only yesterday reading up, in your valuable journal, all the notices on the cuckoo, as well as those in 'Nature' and 'Science Gossip.' There is one point, *viz.* the persistency in form and colour of the eggs as laid by one particular bird, and I am much inclined to believe, with Mr. Harting, that the female has no power to vary the colour or shape or size of her egg to suit circumstances. I believe that she exercises discretion in the choice of the nest into which she is about to deposit her egg, and that she selects the situation with reference to the colour of the egg that she is in the habit of laying. I also fully believe that she puts in the egg with her beak, having previously laid it conveniently near. I have a fine series of the eggs of the Egyptian vulture (*Vultur percnopterus*), varying in colour from white to dark red, and I mention this as an extreme case, yet I believe that each bird in this case lays her eggs nearly of one colour. I am well acquainted with the pair of these birds which yearly inhabit the church-tower at Etawah, N.W. Province India, of which Mr. Hume speaks in his 'Notes on Indian Birds' (Part I. Raptores), and I have taken their eggs: they are more richly coloured than any others that I have ever seen, and they are laid every year the same. At least I can speak certainly for the produce of several. Other nests I have marked as only producing white or very faintly spotted eggs of the same bird. It is true that one often finds very different eggs in the same nest; but this is quite the exception, and not the rule. The inquiries of Dr. Baldamus relative to the colour of the eggs all point to the same result, and it is in confirmation of them that I have penned this note, as it appears to me to bear on an important point in the discussion. I only possess five eggs of the cuckoo, and these present three distinct types, *viz.* that of the nightingale, the wagtail and the lark, and these are so various that the attention of the veriest tyro cannot fail to be arrested and his interest excited in the discussions relative to this bird.—*C. Horne; Upper Norwood, May* 18, 1870.

Migration of Swallows.—It may interest Mr. Smee to know that the sand martin is generally the first of its family to arrive here—say the first week of April; the swallow next, often as early as the 8th—12th; house martin about the first week of May; swift early in May.—*H. Blake-Knox; Dalkey, County Dublin.*

Blacktailed Godwit in Summer Plumage at Scilly.—I have received a specimen of this godwit from Scilly to-day. There is nothing at all remarkable in its plumage for brightness of colour on the throat, breast and belly, like its common congener the bar-tailed godwit, which I have always observed carries a fine unsullied bay-colour on its under parts at this season of the year; but in the blacktailed godwit there is nothing beyond a dull dirty reddish brown, which is confined to the breast only.—*Edward Hearle Rodd; Penzance, April* 30, 1870.

American Wigeon and Garganey on the Taw.—I hear from Barnstaple of the occurrence of the American wigeon on the Taw. A specimen of this species, supposed to be a young mallard, was shot about the 20th of April. Another garganey had been also brought in, which had been shot on the river about the same date.—*Murray A. Mathew; The Vicarage, Bishop's Lydeard, May* 3, 1870.

Sclavonian Grebe in County Dublin.—I see so many notices of grebes in the May number of the 'Zoologist' that I must add my quota to the number. First: early in September I saw a grebe in breeding plumage in the "Smelting-house Pond," Ballycoris: this bird was one of the intermediate grebes larger than the little, smaller than the great crested, the wings had a conspicuous white patch (eared?). Little grebes are to be seen in this pond. The eared grebe has been seen in this county in summer. In December I procured a fine specimen of the Sclavonian in "dusky grebe" plumage. In March a second Sclavonian in same plumage, but with the rufous head-feathers appearing. I have both these grebes.—*H. Blake-Knox; Dalkey, May* 1, 1870.

Garganeys, &c., near Sheerness.—A friend of mine shot a fine pair of garganeys, about the middle of March last, near here; and also about the same time a magnificent pair of hooded mergansers, the male of the latter species being in splendid plumage. During the cold weather in February I saw a flock of some sixty snow buntings close to the town, and another friend of mine shot several specimens of the purple sandpiper, two of which he kindly presented to me.—*Gervase F. Mathew; Royal Naval Barracks, Sheerness, May* 12, 1870.

The Great Auk from Funk Island.—I have only just received the March number of the 'Zoologist,' in which appear Professor Newton's remarks upon my communication respecting the foot-note at page 1855 of the issue for October, 1869. I have no desire to continue the controversy any further, as my only motive for troubling you, was to disprove that statement, which it must be acknowledged tended to exhibit me as the recipient of what really should have been another's, a position which even the sagacity granted me by Professor Newton fails to discover an agreeable one. May I be allowed to repeat that, *according to all the evidence I am in possession of*, that statement was incorrect, and therefore I trust that gentleman, whose familiar name I hold in the highest esteem, will perceive that my note, although apparently unceremonious in tone, was not intended to reflect upon him so much as the author of the paper, who I think, on consideration, must acknowledge that his foot-note, which has given rise to the controversy, was slightly detractory in regard to the pleasure afforded me in presenting the specimen for the benefit of Science.—*J. Matthew Jones; Institute of Natural Science, Halifax, N.S., May* 3, 1870.

PS.—Mr. Reeks, at page 1856 of the 'Zoologist' for last October, in commenting upon the Bishop of Newfoundland's letter to me concerning the position the auk mummies were found in on Funk Island, observes, "If the specimens were really embalmed or entombed in the ice it is right to infer that they were not originally Funk Island birds, but that they died in high northern regions, and *there* became entombed in ice which eventually drifted on to Funk Island." Mr. Reeks entirely mistakes his lordship's meaning if he thinks it is intended to convey the idea that the ice alluded to was berg ice from the north. It was original Funk Island ice, or rather *guano ice*, if I may use the term, which had formed in a cleft facing the north, on which the sun never shone, in which the birds were found; and if he thinks that it is impossible for ice to remain unmelted in such a position through the short summer of that northern latitude, I think his astonishment will be great indeed when I state, on excellent authority, that there are particular spots known in this province of Nova Scotia, which is still further south, where ice remains in its natural unmelted state from one winter to another. So the term "ice which never melts" was I think italicised prematurely. I am in hopes that shortly a visit will be made to the island in order to set at rest the question as to the existence of other specimens. As I have only just returned from a trip to the eastern part of this province, and am in the midst of preparations for a start to-morrow through the forest to the westward, I have no time to allude to other portions of Mr. Reeks' "Newfoundland Notes" which I think require notice.—*J. M. J.*

Plumage of the Adult Male Merganser.—I have just read Mr. Rodd's note on the plumage of this bird (S. S. 2141). I have frequently met the merganser in full (so called) breeding plumage in winter; old males are always so in January, as are goosanders, shags, cormorants, ducks, &c. I have found guillemots and redthroated divers assuming "breeding" dress in December. Having found both these birds changing from breeding to winter dress in November, I cannot understand the change *vice versâ* within six or eight weeks. It is a difficult subject to unravel, but I think birds killed in winter with full breeding dress must be very old birds that have not moulted in autumn, or, as Mr. Rodd proposes, permanently retain this plumage. That adult guillemots change from September to November from the brown to the white head I have ample proof, having killed the young in down swimming with the moulting female when not another bird was in sight. But birds that commence assuming the apparent breeding dress in December I am inclined to think young birds for the first time attaining this dress (I do not think they would breed the following spring), for this reason, that the "autumn" moult, or a large part of it, takes place in the summer some months earlier than the real autumn moult of the adult, and for this reason the "spring" moult commences earlier; that is, in December to January. These remarks do not apply to the mergansers, which I believe retain the "breeding" dress when once assumed,—that the crests of these and allied birds are a spring and summer appendage I have no doubt,—falling or wearing off during the breeding season, and then not assumed till late in winter or early in spring. Like many land birds, as the fringes of the feathers abrade, the plumage becomes clearer, and in spring a more *lusty* pigment is driven through the plumage, as it is into the eyes, bill and feet. Young mergansers and ducks in first winter are very similar to the female, assuming the following spring a dress analogous to the old male, but neither so pale nor so decided; not so pure for these reasons—it wants lust (I do not think wild ducks, &c., breed their first spring), which deprives it of that lustre and *rivalry*,—I cannot describe my meaning by any English word,—which I fancy so much helps to beautify the plumage of male birds in spring, more especially those that are polygamous; also, being new, the fringes are deep and heavy, concealing the body-colours of the feather, which in adult birds are exposed. Is it a fact that domestic drakes assume female dress in autumn? It does not occur, or rather it has never occurred to my knowledge, in Ireland, certainly it is not a rule. Some say wild drakes are affected the same way, but I see splendid fully-plumaged birds all through the winter.—*H. Blake-Knox.*

Correction of Errors.—'Zoologist,' S. S. 2121, line 21, *for* "as in *each* winter," *read* "as in *early* winter." Page 2123, line 30, *for* "(very *true*)," *read* "(very *terse*)," meaning short and carelessly recorded.—*H. Blake-Knox.*

Notes from Denbighshire.—On the 2nd of April two woodcocks were flushed together in the woods near the house: they made a grunting kind of noise, but I have not been able to ascertain whether they are breeding here. On the 28th I shot a pair of ring ouzels: they had a nest containing five eggs; the female sat very close: they are not very uncommon on the hills near here. On the 29th I observed a number of pied flycatchers, almost all males—I only saw one female: they were not shy. Some short time ago I shot a blackbird, whose prevailing colour was a kind of gray, but the large feathers of the wings were pure white: I had it stuffed. In the winter we were visited by a number of mountain finches: they were in company with a flock of chaffinches: they continued about the house for some days.—*William J. Kerr; Maismer, Denbighshire.*

Ornithological Notes from Taunton.—In December last I obtained a fine male goldeneye, which is uncommon here, and saw two or three tufted ducks. Throughout the winter pochards have been comparatively numerous in the market. I do not remember having seen any last year. On the 9th of March I got a fine male scoter, which had been killed on Curry Moor, some fifteen or sixteen miles from the sea. On the 28th I bought a fine pair of garganeys, in good plumage, and two days afterwards saw a male in the poulterer's shop. On the 9th of April I saw the swallow and sand martin, and heard first of the cuckoo. On the 15th I saw the common sandpiper, redstart and a fieldfare—the last I have seen this year. On the 23rd I saw the common sand martin, the least common of the Hirundinidæ here. On the 26th I saw the first swift.—*William J. Chalk; The College School, Taunton.*

Increase of Sea-fowl in the Isle of Wight.—In a row round the Freshwater cliffs on the 22nd of April a good many gulls were seen on and about the face of the precipice: owing to the fog the herring gull only was identified, but I was told by one of the watermen that the lesser blackbacked and other gulls are now assembling here, and that there are more sea and land birds congregating than had been known for many years. They seemingly are aware of their security and freedom from molestation, for though we passed close to the cliffs little notice was taken of us, nor did the herring gulls, as is their wont, rise *en masse* with clamorous and defiant note. The cormorants and guillemots, too, appeared less wild than usual, some coming within shot. A few puffins were pointed out, but I failed to distinguish or identify them through the mist; but that they, as well as the shag, will now breed here there can be little doubt, and there is reason to hope that the chough will again make these lofty cliffs its habitat. The peregrine, too, may now nest in security, unmolested by gunner, trapper or egg-robber: that one pair is breeding here this season is pretty clear, for on approaching Freshwater from the eastward, and before ascending the Downs, a large hawk, disturbed by our carriage, rose heavily on wing from within the hedge bordering the high road, with a large bird in its talons; that its prey was a partridge there could be little doubt, for in the same field two partridges were seen cowering among the newly sprouting corn. I am rejoiced at the chance protection afforded the peregrine by the new Act, which will greatly increase their numbers, and the same may be said of the raven; the kestrel, too, will be benefited, though in a less degree. It is much to be desired that our common shell-fish should be protected, before the crab and lobster become as scarce as the oyster, for they are now taken in season and out of season, though during summer they are watery, flabby and unwholesome. It is a common saying that the crab should not be eaten when the letter *r* is in the month.—*Henry Hadfield.*

Rare Birds in Wiltshire.—The following rare birds have been lately received for preservation:—A little auk from Gore, near Salisbury Plain; and a rednecked grebe and a Sclavonian grebe from G. H. W. Heneage, Esq., Compton Basset, shot at Lyneham.—*J. Grant; Devizes, Wilts.*—'*Field.*'

Parasite of Fish.—On cleaning a reservoir in which I have a quantity of fish, I found the accompanying parasites sticking to some of the roach and carp, most of them on two roach that were suffering from a disease that attacks them in gray fungous-looking patches, of which they eventually die. Can you tell me what they are?—*Egbert D. Hamel; Tamworth, April* 25, 1870.

[The name of these curious parasites is Argulus foliaceus: they are not always attached to the fishes as in this instance, but can swim freely in the water, and are then most amusing and really beautiful objects.—*Edward Newman.*]

Proceedings of the Entomological Society.

April 4, 1870.—A. R. WALLACE, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 117; presented by the Society. 'Exotic Butterflies,' Part 74; by W. W. Saunders, Esq. 'Lepidoptera Exotica,' Part 4; by E. W. Janson, Esq. 'Equatorial Lepidoptera collected by Mr. Buckley,' Part 4; by W. C. Hewitson, Esq.

Election of Member.

Humphry Wm. Freeland, Esq., of The Athenæum Club, was ballotted for and elected a Member.

Exhibitions, &c.

Mr. J. Jenner Weir (on behalf of Mr. James Vogan, who was present as a Visitor) exhibited specimens of grain attacked by weevils: from 74 tons of Spanish wheat 10 cwt. of weevils had been screened, and these must have consumed several times their own weight of grain before arriving at maturity: in August, 1868, some American maize was stored, weighing 145 tons; in August, 1869, this was found to be infested with weevils, and 6 cwt. of the beetles were screened out; in December 29 cwt. more were screened out, making a ton and three-quarters in all. Specimens of the weevils were exhibited, and in both cases the depredator proved to be the rice-weevil, Calandra oryzæ, and not C. granaria: along with the weevils were a few specimens of Stene ferruginea and of a Læmophlœus, the predatory larva of the latter being the natural enemy of the Calandra.

Prof. Westwood observed that no description of the larva of Calandra granaria had been published: it was comparatively a fatter and shorter larva than Balaninus, distinguished from the usual form of Curculionidous larvæ by having two recurved points or hooks at the extremity of the body, and changed to the pupa within the grain.

Mr. M'Lachlan mentioned that he had frequently noticed the walls of London granaries covered on the outside with Tinea granella. Mr. J. J. Weir corroborated this, and added that the London sparrows might be seen to rise at and catch the moths when the latter were disturbed; in fact, the sparrow was acquiring the habits of the flycatcher.

Mr. Howard Vaughan exhibited numerous specimens of Dianthœcia carpophaga, showing great variation in colour, all bred from larvæ found near Croydon in 1868.

Mr. J. J. Weir, with reference to Mr. Butler's suggestion of the identity of Argynnis Adippe and Niobe, exhibited four specimens which had been sent to him from St. Petersburg, one as the typical form of Adippe and another as its variety Cledoxa, and one as the typical form of Niobe and another as its variety Eris: the typical form of each had silvery spots on the under side, and these were absent both from Cledoxa and Eris; but notwithstanding this parallelism of variation, there was no greater approximation to one another in the two varieties than there was in the two typical forms. Mr. Albert Müller remarked, however, that what was regarded in Switzerland as the typical form of A. Niobe did not possess the silvery spots on the under side.

Mr. Albert Müller (in reference to the note in Proc. Ent. Soc. 1869, p. xxv., and 'Zoologist,' 1870, p. 2027) read the following extract from a letter received from Mr. H. F. Bassett, of Waterbury, U. S. A., on the odour of Cynipidæ :—

"You speak of the peculiar odour of certain species of European gall-flies. A similar odour is strongly apparent in three sub-apterous species of Cynips that I have reared from the galls, namely, C. pezomachoides, *Osten-Sacken*, C. forticornis, *Walsh*, and C. hirta, *Bassett;* and I find that Dr. Fitch, in the description of his Philonix* fulvicollis, mentions that it 'exhales a perceptible odour, resembling that of ants or bees' (Fifth Report on Noxious Insects of New York, p. 3). I do not remember to have noticed this odour in any of the winged species I have reared."

Mr. F. Smith exhibited two remarkable forms of Hymenoptera from the Rocky Mountains, the Masaris vespoides of Cresson, and Pterochilus 5-fasciatus of Say.

The Secretary exhibited a mole-cricket sent to the Society by Mr. A. P. Falconer, who found it running about the cabin of his daahbeeh on his return from Philæ to Alexandria. The specimen had been compared by Mr. M'Lachlan with the descriptions in Mr. Scudder's recent paper in the first volume of the Memoirs of the Peabody Academy, and he believed it to be Gryllotalpa cophta, the Gryllus cophtus of De Haan, figured by Savigny, Descrip. de l'Egypte, Orthoptera, pl. 3.

The Secretary read the following note on the spectrum of the fire-fly, extracted from the Journal of the Society of Arts:—

"The spectrum given by the light of the common fire-fly of New Hampshire is, according to Mr. C. A. Young's observations, perfectly continuous, without trace of lines either bright or dark. It extends from a little above Fraunhofer's line C in the scarlet, to about F in the blue, gradually fading out at the extremities. It is precisely this portion of the spectrum that is composed of rays which, while they more powerfully than any other affect the organs of vision, produce hardly any thermal or active effect. Very little, in fact, of the energy expended in the flash of the fire-fly is wasted. It is quite different with our artificial light. In an ordinary gas-light, it is proved that not more than one or two per cent. of the radiant energy consists of visible rays, the rest is either invisible heat or actinism; in other words, more than ninety-eight per cent. of the gas is wasted in producing rays that do not help in making objects visible."

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* Query, *Philonips*, not Philonix, which is a hybrid, half Greek, half Latin: the author himself gives the derivation, "φιλος, *a lover; νιψ, snow.*" Dr. Fitch writes the name of the family *Cyniphidæ*, in lieu of Cynipidæ, probably on the hypothesis that Cynips is derived from νίψ; but query, whether snow enters into the composition of Cynips: I always supposed it was a compound of ἴψ, in which case Cynips, gen. Cynipis, fam. Cynipidæ, are correct. I may add that Dr. Fitch has altered Prof. Westwood's Biorhiza into *Biarhiza*. The latter change is designedly made, for (5th Report, p. 1) the author says, "I suppose this name to be derived, not from βίος, *life*, as its orthography would indicate, but from βία, *injury*, and ῥίζα, *a root*, and if so it should be written *Biarhiza*, instead of as we find it in books." Upon this I may remark that the name may as well be derived from βίος and ῥίζα, in the sense of *living in the root*, as from βία and ῥίζα, in the sense of *injurious to the root;* and even if the latter be the true derivation, I should like to submit, for Dr. Fitch's re-consideration, whether the remedy (Biarhiza) is not worse than the disease (Biorhiza), and whether the name should not be written *Biorrhiza* instead of as we find it in books. At p. 16 of the same Report, Dr. Fitch describes a new beetle under the name *Leiopus Querci* (adding that "it is very closely related to the Facetious Leiopus"), and at p. 24, a new Aphis under the name *Eriosoma Querci:* I believe the word *querci* as the genitive of quercus does once occur in a writer on husbandry in the third century of the Christian æra, but query whether it was worth while to have dug out this singularity: why not have been content with the ordinary genitive *quercus?—J. W. D.*

Mr. G. R. Crotch sent for exhibition British specimens of four species of Dasytidæ; one being Dolichosoma protensa, taken some years ago in the Isle of Wight, and agreeing entirely with Spanish specimens taken at Carthagena; the other three belonging to the subgenus Mesodasytes, and having a somewhat complicated synonymy. The following note was read respecting them:—

"The old genus Dasytes has been subdivided by Mulsant and Rey into five subgenera; all our species, except the rare D. niger, fall into the third of these, called Mesodasytes, of which three species are described from France, all of which are found also in England. Mulsant's nomenclature is by no means in accordance with Kiesenwetter's, and he seems not to have noticed Kiesenwetter's paper on the Spanish Melyridæ in the eleventh volume of the Berlin Zeitschrift. Thomson again appears to be at variance both with Mulsant and Kiesenwetter, so that the group is somewhat confused. The synonymy appears to me to stand thus:—

1. Dasytes oculatus, *Kies.* (1867) = coxalis, *Muls.* (1868) = plumbeus, *Ill.*, *Thoms.* (nec *Müll.*)

2. D. plumbeus, *Müll.*, *Kies.* = flavipes, *Oliv.*, *Muls.* (nec *Fab.*) = fusculus, *Thoms. ?* (nec *Kies.*)

3. D. plumbeo-niger, *Goeze* = æratus, *Ste.* = ærosus, *Kies.* = plumbeus, *Oliv.*, *Fourc.*, *Muls.* (nec *Müll.*) = subæneus, *Thoms.*, *Crotch Cat.* (nec *Schönh.*)

The three species have a considerable resemblance in form and colour. D. plumbeo-niger may be known by its concolorous antennæ and legs. The males of D. oculatus are distinguished by the large globose eyes, the space between which is much narrower than in D. plumbeus: the females are more difficult, but in D. oculatus the base of the antennæ and the anterior coxæ are testaceous, while in D. plumbeus only the second joint of the antennæ is testaceous, and the eyes are less developed in the latter species. I have received from M. Eichoff specimens of D. ærosus, *Kies.*, which agree perfectly with the common English species, æratus, *Ste.*, which, however, will take Goeze's name, plumbeo-niger; Kiesenwetter appears formerly to have confounded it with D. plumbeus. The range of the three species in England requires further observation; my specimens of D. oculatus are all from Mr. Wollaston, who found them in Lincolnshire, while my D. plumbeus are from the neighbourhood of London. It seems very probable that more species of the genus Dasytes will occur in England; D. obscurus, *Gyll.*, can hardly be wanting, and the true D. subæneus may be confidently expected, and may at once be known by its tarsi, which exceed the tibiæ in length."

May 2, 1870.—A. R. WALLACE, Esq., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 118; presented by the Society. 'Journal of the Quekett Microscopical Club,' No. 10; by the Club. 'Bullettino della Società Entomologica Italiana,' 1870, part 1; by the Society. 'The Canadian Entomologist,' vol. i.; by the Editor. 'Recherches sur les Crustacés d'eau douce de Belgique,' parts 2 and 3; and 'Matériaux pour la Faune Belge: Crustacés Isopodes terrestres;' by F. Plateau, the Author. 'Notes additionelles sur les Phryganides décrites par M. le Dr. Rambur;' by R. M'Lachlan, the Author. 'Descriptions de Calosoma nouveaux des Collections de MM. de Chaudoir et Sallé;' by M. de Chaudoir, the Author. 'Contributions to the Theory of Natural Selection;' by A. R. Wallace, the Author. 'Contributions towards the Knowledge of Indian Arachnoidea;' by Dr. Stoliczka, the Author.

The following additions by purchase were also announced:—Latreille, 'Histoire Naturelle des Crustacés et des Insectes,' 14 vols.; De Castelnau, 'Notes on Australian Coleoptera.'

Exhibitions, &c.

Mr. Hewitson sent for exhibition a selection from a large number of butterflies collected in Ecuador by Mr. Manuel Villagomes. The whole collection comprised 2000 specimens in perfect preservation, and the new species are described in the paper mentioned below.

Mr. F. Smith exhibited a collection of Japanese Hymenoptera (also a few Coleoptera and Diptera) made by Mr. Geo. Lewis at Nagasaki. The Hymenoptera included a few Ichneumonidæ, but the principal part of the collection consisted of Aculeata, of which there were forty-four species, and of these about twenty appeared to be undescribed. The Apidæ consisted of one new species of Prosopis, two of Halictus, and five of Megachile (two of which have also been found in China); also one species of Lithurgus, one of Stelis, two of Cœlioxys; one undetermined species of Xylocopa, one Bombus (undetermined, but probably described), and lastly, one honey-bee, the Apis nigrocincta, also found in China, the queen of which was not distinguishable from Apis mellifica, though the workers were perfectly distinct. Of Fossorial Hymenoptera, there were a new species of Pompilus, Priocnemis dorsalis (also found in China, Java and India), a species of Agenia, an undescribed species of Ammophila, three species of Pelopæus, including P. deformis, found also in China, and P. bengalensis, a widely distributed form, found in India, China, Singapore and most of the Islands of the Eastern Archipelago; Sphex argentata, perhaps the most widely distributed species of the genus, found in India, Sumatra, Java, Borneo, Celebes, Ceram and Aru, also in North Africa and South Europe; a new species of Ampulex, Crabro vagatus, found also in China, an undetermined Larrada, and a new species of Cerceris. The Vespidæ, being insects of wide distribution, were mostly described species, but there were one new species of Eumenes and three of Odynerus; also Rhynchium ornatum, found also in China; four species of Polistes, two apparently new, P. hebræus, found also in China, India, Mauritius and Palestine, and the common European P. biglumis, of which scores of specimens had been sent; lastly, of the genus Vespa, there were four species, V. ducalis, V. japonica, V. mandarinea and V. anchorata. On the whole, the collection was decidedly European in appearance, and though many of the species were widely dispersed, very few of them had been previously recorded from Japan.

Mr. M'Lachlan exhibited some exotic dragon-flies; Hypopetalia pestilens, described in the paper mentioned below, and Chalcopteryx rutilans, of which genus a new species is described in the same paper.

Mr. Albert Müller exhibited the original drawings of Labram, illustrating the late Dr. Imhoff's Insecten der Schweiz, and other entomological works.

Mr. H. W. Bates exhibited some exotic Copridæ, described in the paper mentioned below.

Mr. G. R. Crotch sent for exhibition Trachyphlœus laticollis (*Schönherr*, vii. 118), a beetle new to the British list; five specimens had been captured some years ago at Weston-super-Mare. He considered the T. anoplus of Förster, and the T. rectus and spinimanus of Thomson, to be synonymous with T. laticollis, which ought to be placed with T. alternans, spinimanus and scabriusculus, being nearest the former by the weak armature of the tibiæ: the comparatively dense setæ separate it from T. alternans and also from T. spinimanus.

Referring to the exhibition of Bombycidæ described as Oeona punctata, Lasiocampa remota and Lebeda hebes (see Proc. Ent. Soc. 1869, p. xxii.), Mr. Dunning said that he had written to Mr. Holdsworth, calling his attention to the improbability of the same species of larva feeding both on oak and pine, and had received the following, dated Shanghai, 7th February, 1870:—

"That the specimens were *all* bred from the same larvæ is correct, and the statement that three distinct species have been made out of them has puzzled me very much. It clearly shows how careful we ought to be, when collecting in foreign climates, to pay greater care to the watching and collecting of larvæ. With regard to these Bombyces, it is my opinion that they are male and female of one and the same species. The specimens sent you show, it is true, considerable difference in colour and markings, but if you could see the large number which I have in my cabinets, with the varieties gradually merging into each other, I think you would at once proclaim them one species. Again, amongst the hundreds of larvæ which I found and bred, the only difference to be observed was in the lighter or darker shade of the ground colour, from blackish brown to velvetty black; and this very trivial difference could scarcely be sufficiently important to constitute distinct species. The hill on which I found the larvæ was covered on one side with small pines, dwarf oak, briars, azaleas and other small trees and scrub; but I found the larvæ feeding only on pine and oak, and I found also cocoons on both trees, the cocoons being also exactly the same. On my return to Shanghai I brought with me a large quantity of larvæ, some taken from pine and some from oak; but owing to my being unable to obtain the proper pine (the only food I could supply them with was dwarf oak from the Fung-wan-shan hills, thirty miles from Shanghai) all the pine-feeders died, and the oak-feeders made their cocoons. The cocoons found on the two kind of trees I kept separate, and the same great variation in colour and markings was noticed in the insects from both. Therefore I think we may safely say that Oeona punctata, Lasiocampa remota and Lebeda hebes are one and the same."

Mr. Holdsworth's letter also contained the following description (see Proc. Ent. Soc. 1869, p. xxi.) of the larva of Heterusia remota:—

"Length when full grown, one inch. Head black, comparatively small. Legs very short. Body primrose-colour, covered with tubercles and coated slightly with fine hairs; a black line down the middle of the back, a broader black line on either side for the entire length of the body, upon which are white tubercles having black centres; on each side, near the end of the black line, a vermilion spot, also one on either side of the head. The under side of the body of a dirty white colour. Feeds upon an evergreen-like stumpy bush with round glossy leaves, the blossom white with yellow centre. The larva curls a small leaf with its edges inwards, and there makes a small white paper-like cocoon, three-quarters of an inch in length. The larvæ spun up 15th—19th May, and the moths appeared 4th—5th June."

The Secretary mentioned that Mr. Holdsworth had sent over some silk-cocoons, which he had received from the interior of China, the provinces of Honan and Szechuen; the Honan cocoons were doubtless Bombyx Pernii; those from Szechuen belonged to an oak-feeding species, and though remarkably large and heavy were probably only a fine race of the same B. Pernii.

The Secretary also drew attention to a Report made by Mr. Adams, Secretary to Her Majesty's Legation in Japan, on the subject of silk-culture in that country, dated in January last. He states that the complaints of the degenerate quality of the season's silk are universal. Several silk inspectors declare that the general quality has visibly deteriorated, the hanks being unclean and very tangled; and one, who buys for a house in Lyons, says that there has been very little really first-rate silk in the market since the beginning of the season. The Japanese, incited by the high prices paid by foreigners, have looked to quantity rather than quality, believing that they can sell profitably whatever produce they bring to the Yokohama market; more women are consequently engaged at the reeling period, and not only are the new hands inexperienced, but, being for the most part paid according to the amount which they reel, they do their work in haste and carelessly. Mr. Adams recommends that modern machinery be introduced into Japan, with some European reelers to teach the use of the machines: the silk would then be clean and uniform, and would rise in value, soon making up by its increased price for the first outlay in machinery. Some modifications in the European machines are considered necessary, and it must be borne in mind that the women are much smaller in stature than the European reelers. The shipments of silk from the 1st of July, 1869, to the end of the year were about 6,850 bales, against 12,000 in the same period in 1868, and 5,000 in 1867; but there was no dearth of silk in the market, and the crop of 1869 seemed to be as abundant as that of 1868. One cause of the deterioration of the silk is the immense export of eggs of the best quality, foreigners offering high prices for the cards. The three great steam-boat lines carried to France and Italy in 1868 2,300,000 cards, and in 1869 1,390,000 cards. The universal ravages of the maggot known as the uji have much to do with this considerable decrease. It is believed that the fly fastens upon the young silkworm, and, pricking it, deposits its egg or eggs within the skin; adipose matter is formed round the egg, and when the egg is hatched the maggot feeds upon this matter, and, increasing in size, penetrates more and more into the intestines of the silkworm. The Japanese throw away all the uji, believing them to be dying or dead; but the uji does not die, but turns into a fly: the persons employed should be enjoined to destroy every uji as soon as it emerges from the cocoon, a course which would very materially diminish the number of flies in the following spring. Also, when the silkworms are going to spin, the Japanese should separate all those cocoons which have the dark mark showing that they contain uji. These should be suffocated, thus destroying the uji; the cocoons would be reserved for reeling. The disease would thus be arrested, and, it would seem, eventually eradicated.

Papers read.

The following papers were read:—

"Descriptions of twenty-two new Species of Equatorial Lepidoptera"; by Mr. Hewitson.

"Descriptions of a new Genus and four new Species of Calopterygidæ, and of a new Genus and Species of Gomphidæ"; by Mr. M'Lachlan.

"On a new Genus and some new Species of Copridæ (Coleoptera-Lamellicornia)"; by Mr. H. W. Bates.

"Descriptions of some Genera and Species of Australian Curculionidæ"; by Mr. Pascoe.

Catalogue of British Neuroptera.

"A Catalogue of British Neuroptera," compiled by Mr. M'Lachlan, the family Ephemeridæ by the Rev. A. E. Eaton, and published by the Society, being the first part of the proposed General Catalogue of the Insects of the British Isles, was on the table.—*J. W. D.*

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BIRDS' EGGS.

MR. J. C. STEVENS begs to announce that he has received instructions to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on Friday, June 10, at half-past Twelve precisely, a CHOICE COLLECTION OF BIRDS' EGGS, COLLECTED CHIEFLY IN LAPLAND (1869), being duplicates from the Collection of the Rev. Herbert V. Hawkins, together with a few collected in Faröe by Herr C. Müller. On view the Morning of Sale, and Catalogues had one week prior to the Sale.

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